

surgical and sanitary science could suggest to render it a model institution. It is a liberal education to a nurse to live and work in this atmosphere for a brief six months.

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## STRENGTHEN THE WEAK LINK IN THE CHAIN

By MARTHA SMITH

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SCIENTISTS are striving to conceive of and evolve ideas along the line of perpetual motion—which is just what the public is asking for in the trained nurse. We *can* offer them some nurses who understand that their bodies are self-repairing machines that will give them long, willing service of a character which will satisfy the most exacting demand; and it will not be long before every nurse will be trained to understand herself before she begins to try to understand the sick. How can we understand others if we do not understand ourselves?

This self-repairing machine is one we already know of, but few people use this machine, their own bodies, with that understanding of it. A thorough understanding of this idea of the body—the body as a self-repairing machine—on the part of nurses in hospital service would save the management expense, the superintendent uneasiness, and the nurses themselves much uncharitable thinking about many things—which, in itself, would be a conserving of energy well worth having taken a hospital training to learn.

Work is not hard so long as the body is comfortable, and hours are neither many nor long until the mind wanders a distance away from the body. For one who cannot concentrate, there is nothing but fatigue and unsatisfactoriness. Where our thought is, there we are placing our energy; while the mind's instrument, the body, is then working without this energy.

When one has learned to watch the body as the engineer watches his steam gauge, it can be used at any work one chooses for an astonishingly long period of time, and one day after another the year through. Our health is the thing on which our whole life is conditioned. Why not learn to read our bodies as a barometer or steam gauge is read, and so not make, rather than wipe out, conditions? An ounce of prevention is better than a pound of cure, and every one has marvellous power within herself when once the mind willingly lends itself to this study of prevention and preservation, conserving of nervous energy and physical strength.

This applies to the body not only in hospital work (where the hours are long and the work is both hard and trying), but also in that phase of private work and home life where the monotony seems enervating, and the sameness continues to such an extent that it lacks the normal, even necessary stimulation. This, to many people, is a condition very trying on the general health.

Physical training, when taught to nurses, can be dealt with only by going directly to the principle on which all physical exercise is based: teaching this principle as applied to the motions used in making beds, lifting patients, carrying trays, long standing, endurance in hours of working, sitting at attention, and also relaxation for short periods of rest; as along the normal functional lines, keeping in view the fullest range of customary movements, many of which become impaired or lost from lack of accurate use even in these young women, or have not been brought into use.

All nurses are accepted or chosen in one respect for their good physical history and present condition. Few women at the ages when women enter training-schools have had experience or conditions which would test their endurance.

As we look for the weakest link in a chain, so we look upon a nurse who is normal with the view of finding where she would have a tendency to give out when pressed by mental anxiety, long hours, or any undue strain. If we can open the mind of the probationer to the necessity of watching at this point, she is initiated into establishing herself both ways, physically and mentally, even in this new kind of life, which is very extreme to her, and would test any woman, however normal, unless she had great buoyancy of spirit to reinforce her. It is now the duty of all teachers to inculcate in the young a philosophic attitude towards annoyances, disappointments, and even troubles, for these must be met by all, and the nurse seems to suddenly step into more than her share. Why should this teaching be left out of the probationer's course? From a rather thoughtless girl, she now watches herself at this important point, with no prodding or oversight from any one.

A little instruction to the new nurse, more as a note of warning than with any idea of remodelling her, will save her from slipping into the exaggerations of body the advertisements and fashion books of to-day are picturing. The sway back and exaggerated straight front are fashions which may be responsible for a nurse's beginning to give out if she persists in following them, instead of observing the principle of physical poise, when attempting to do long hours of work. How can she know principle when she has been taught only what not to do?

The distressing thought in this is that ninety-nine out of every hundred do not know that the present fashion as pictured in the alluring advertisements *is* incorrect. If one would think for a moment, it would come to mind that with every physical effort that soft part of the body below the ribs should be gathered together, thus bringing a relatively straight lumbar spine and level pelvis, which compels a normal action of the abdominal wall, by which support of the loosely-attached abdominal organs is maintained.

Every structure, even that of the body, has its foundation under it. This fashionable standing position throws the foundation of the body, the pelvis, back of its upright, causing a sharp contraction in the lumbar region; and, to counterbalance this, a throwing out of the chin, causing a second contraction, high up in the neck. This second contraction of the spine, which throws the chin forward, is the only means by which such a person keeps from falling on the face, or looking like the Leaning Tower of Pisa.

Any heavy lifting or exertion with the spine pressed in these exaggerated curves brings all the strain on the spinal column, leaving the lifting muscles of the front of the body without employment.

To reverse this order of action, use the strong muscles of the thighs and draw the chin in. This holds the head up from the back, freeing these two exaggerated contractions in the spinal muscles, and giving a normal action of the spine itself. The circulation is thus not interfered with.

The other extreme type of woman is the thorough-going house body, who knows nothing of the fashion, and who stands with her pelvis well under her, but has never asserted herself in any form of competition. She has a low chest, is stooped, and emphatically needs to be taught the principle of correct diaphragmatic breathing, which brings out the normal assertiveness necessary that she may hold her own against all odds in this new, strange world she has entered.

In teaching the principles of physical exercise, and not the set of exercises, it has been found that a balance of mind, evenness of temperament, physical endurance, and an ability to see another's point of view, are marked changes which come about, even when the instruction has been given for some physical defect. Especially does this developing of character become noticeable in those who have felt that circumstances have not warranted them in entertaining a big, generous view of life.

When the muscles are properly used they hold the framework without sense of fatigue, because there is no interfering with the circulation; for fatigue is often the result of imperfect circulation, rather than of

work done. Perfect circulation is simply another term for perfect repairing, because action and reaction are equal.

To watch this perfect physical poise, and give little thought to kind of work or hours required, would be doing the same thing as the engineer with regard to the steam gauge. A body improperly set up cannot be expected to give long hours of service, and it is unfair to demand it until definite instruction is given on this subject, and the nurse shows a practical understanding of the principles.

## ARTIFICIAL FEEDING OF INFANTS

By SISTER AMY

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THE ideal food for infants is breast milk, but if for any reason the mother is unable to nurse her child, cow's milk can be *modified*. That is, we alter the cow's milk and make it as near the strength and quality of human milk as we can. Necessarily, milk secreted to nourish the calf is not suited to the requirements of the human infant, for not only is there a difference in the *proportion* of food stuffs, but also in the character and behaviour of them. Roughly speaking, the analysis is as follows:

COW'S MILK		HUMAN MILK	
Fats.....	4 per cent.	Fats.....	4 per cent.
Sugar.....	4½ per cent.	Sugar.....	7 per cent.
Proteids.....	3½ per cent.	Proteids.....	1½ per cent.
Salts.....	½ per cent.	Salts.....	½ per cent.
Water.....	87½ per cent.	Water.....	87 per cent.
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100 per cent.		100 per cent.	

HUMAN MILK PROTEID		COW'S MILK PROTEID	
Lactalbumin.....	1 $\frac{26}{100}$ per cent.	Lactalbumin.....	1 $\frac{53}{100}$ per cent.
Casein.....	1 $\frac{3}{100}$ per cent.	Casein.....	3 $\frac{1}{100}$ per cent.

We see by this that the percentage of *fats* is alike, but the globules in cow's milk are much larger and more difficult to digest on account of the large amount of volatile fatty acids present in cow's milk. The *sugar* of both cow's and human milk is identical in composition, it is lactose in solution. The difference in amount, however, is considerable.